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ABSTRACT

Under a mastery learning system students can take successive parallel tests with study interspersed between tests until they demonstrate a minimal level of competency. For most students, such procedures increase final performance, yet some may experience repeated subjective failure. Self-worth theory predicts that repeated failure in the face of prolonged effort expenditure forces students to acknowledge their inability. The negative consequences of repeated subjective failure were examined with 80 undergraduates enrolled in a modified mastery structure psychology course who perceived their test performances as a series of failures. Questionnaires accompanying the tests assessed causal ascriptions, expectations for future success and affective reactions. As failures accumulated, attributions to inability not only increased but also became more salient in determining variations in shame and expectancy. Low self-concept students were particularly subject to this negative dynamic because they already harbored self-doubts. (Author)

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Repeated Academic Failure and Learned Helplessness in the College Classroom

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The self-worth theory of achievement motivation focuses on student efforts to preserve a sense of competency (Beery, 1975; Covington & Beery, 1976). It is argued that maintenance of perceptions of ability is critical to a sense of personal value due to our society's tendency to equate worth with the ability to achieve competitively. Failure with its implications for low ability is to be avoided; and when it is unavoidable, one can at least deflect low ability inferences by ascribing failure to unstable attributional elements such as bad luck and insufficient effort or to stable external factors such as task difficulty (Heider, 1958; Kelley, 1967, 1971, 1973). Moreover negative consequences are sharply reduced when excuses are present to explain why high effort does not pay off. Thus the threatening effort/ability linkage can be mitigated either by a low effort profile or by excuses which externalize the causes of failure.

What happens when excuses to externalize the cause of one's failures are no longer plausible? The primary objective of this study is to investigate this question of what happens when opportunities to externalize blame, such as an appeal to insufficient effort, are no longer available to the student. A mastery learning paradigm (Block, 1971, 1974, 1977) permits the examination of this inquiry in the ecologically valid setting of test-taking in the classroom. Under such an instructional system students are permitted to take successive parallel form of a test with study interspersed between trials until they demonstrate a minimal level of subject-matter competency. While such a procedure is known to increase the average level of final course performance (Block & Burns, 1976; Johnson & Ruskin, 1977; Robin, 1976), many students still experience repeated subjective failure when successive test performance continue to fall below their grade aspirations (Covington & Omelich, Note 1).

Repeated test-taking failure undercuts certain kinds of excuses in a naturally occurring fashion. For example, blaming failure on unfamiliarity with the test format becomes less convincing as experience with the test increases. For our purposes a failure of defenses occurs when lack of effort or other explanations are no longer plausible. Self-worth theory predicts that this repeated failure in the face of prolonged effort expenditure reduces the plausibility of insufficient effort as an explanation, thereby forcing students to acknowledge their inability. Thus, for many students multiple test-study opportunities may increase feelings of incompetency, intensify shame and lower expectancy of eventual success, despite actual performance gains. The present study investigates these negative consequences of repeated subjective failure.

In the present mastery-learning context we expect that as study time (effort) accumulates over test opportunities, the plausibility of low-effort explanations for failure will progressively diminish and self-perceptions of inability will correspondingly increase. Specific consequences of such declining credibility follow from self-worth theory and can be divided into affective (shame) and cognitive (expectancy) outcomes. First, consider the predictions regarding shame reaction: (1) as a consequence of increasing self-doubt, level of shame reactions will increase; and (2) concurrently, ability attributions will become a more salient causal source for variations in shame, since inability alone now becomes a sufficient explanation for failure (Kelley, 1971, 1973). A parallel set of predictions are made regarding expectancy of future success: (1) besides intensifying shame, increasing self-doubts of ability will also lead to a progressive deterioration in estimates of the probability of eventual goal (grade) attainment; (2) moreover, as failures accumulate, ability attributions will become a more potent

source of influence on variations in expectancy.

Methods

Subjects were undergraduates enrolled in an introductory psychology course featuring a modified mastery structure with instructor-pacing of the examination schedule and grading based on absolute standards. Students were randomly assigned to either a one-test or two-test condition. Those in the one-test condition received one test trial only; whereas, two-test students who considered their first midterm performance a failure had the opportunity to take a second parallel test two days later. Subjects in this study were students who saw their one and only test trial as a failure (N=105) and two-trial students who saw their performances on both tests as failures (N=80).

Results and Discussion

First Failure

In order to understand the multiple failure dynamic, it is necessary to explore briefly the initial failure experience. We suspected that individuals prepare differently for an upcoming test, depending on whether or not they have a second-test opportunity. The fact that two-test subjects were made aware of their second-test option at the beginning of the course did influence the quality and amount of their preparation for the first test and consequently, their initial performance reactions. This is especially true for one-test HSC subjects (F) who expended more effort in preparing for their only try that did two-test (FF) subjects who had an additional chance (Variable 8: $\underline{d} = .78$, $\underline{p} < .05$). As a result, one-test subjects were less likely to explain their failures in terms of low effort (Variable 4; $\underline{d} = 1.58$, $\underline{p} < .05$). Moreover, these one-test subjects reported greater shame at failure ($\underline{d} = .99$, $p < .05$) when compared to their two-test counterparts.

Dynamically, this complex set of findings is best understood in terms of self-worth theory which holds that shame and expectancy in failure are mediated by inability attributions which in turn depend on degree of effort expenditure. Since effort level is crucial to this formulation, the fact that one-test HSC subjects spent considerably more time preparing for the first test, takes on particular significance. Because of this extra study, insufficient effort ought to become correspondingly less plausible as a postdictive explanation for failure, a prediction borne out by the one-test HSC data on effort attributions. Thus given the linkage between ability and effort ascriptions, these subjects were literally forced to attribute failure disproportionately to low ability, thereby intensifying their shame beyond that experienced by two-test HSC individuals.

This implied dependency of shame on a complex linkage between ability ascriptions and effort expenditure is confirmed by a regression analysis, in effect, a path analysis of the three-variable causal model of self-worth theory. The self-worth model is presented schematically in Figure 1. Three sources of influence on affect are postulated, two direct and one indirect. First, shame follows directly from perceiving oneself as incompetent (A $\longrightarrow$ Shame). Second, degree of effort expenditure exerts a direct, independent influence on shame (E $\longrightarrow$ Shame). Third, effort expenditure also exerts an indirect influence on shame through ability ascription; that is, as effort increases so do ascriptions to inability, which in turn, increase shame.

Results generally confirm the predictions of the model for an initial failure. As can be seen in Figure 1, shame follows from increased ascriptions

to inability; shame also increases directly as a function of effort expenditure. Finally, although in a predicted direction the magnitude of the causal relationship between effort and ability fails to reach significance, suggesting that a single, initial failure in an unfamiliar test situation is not sufficient to establish this linkage. In fact, 68% of the variation in shame is represented by the direct linkage from effort expenditure to shame -- students experience distress simply because they try hard. The indirect effect of effort mediated through ability attributuions contributes only negligibly in the dynamic. However, ability ascriptions as an additional independent source of shame account for the remaining 32.3% of the variance, resulting in a significant increase in explained variation.

A second path analysis was performed employing expectancy of success on a second try as the dependent variable. Only those subjects actually having a second try (FF) were included. The results confirmed laboratory-based research indicating that despair of ultimate success depends on whether the individual ascribes immediate failure to stable (ability) or to unstable (effort) elements (e.g., Klein, Fencil-Morse & Seligman, 1976; Tennen & Eller, 1977; Weiner, Nierenberg & Goldstein, 1976). Degree of study exerted no discernable, direct impact on success expectancy ($\underline{P}$ = -.009), accounting for only 3% (R^2 = .004) of the total explained variation in expectancy (R^2 = .119) through both direct and indirect pathways of influence, $F(1,73) = .316$, $\underline{p} > .05$. Rather, it appears that effort worked its influence indirectly through a tendency to depress post-dictive ability ascriptions ($\underline{P}$ = .154, $\underline{p}$ = .19) which in turn dampened success expectancies ($\underline{P}$ = -.343, $\underline{p} < .05$). The overwhelming role of ability inferences in determining variations in expectancy is underscored by the fact that ability

as both a direct and indirect mediator of expectancy accounted for the remaining 97% of the variance, $F(1,73) = 9.53$, $p < .05$

In summary, these path analyses of postdictive reactions to first failure allow us to establish that distress and future success expectancy are mediated by prior levels of effort expenditures as well as by explanations of failure that involve assumptions of low ability. Given this initial failure dynamic, the question now becomes whether or not a second test failure in the face of accumulating effort expenditure will increase self-ascriptions to inability, thereby escalating shame and hopelessness, or will perhaps even alter the nature of the dynamic itself.

Second Failure

We now turn to evaluating the consequences of a second failure. By assessing changes in various psychological reactions for the same individuals over two successive failure experiences evidence is generated on the questions of increasing helplessness. It is clear that with repeated failure comes substantial changes in the individual's explanations of failure. First, we note that students are less likely to contribute their second misfortune to insufficient effort when compared to their explanations of first failures, a change that simply reflects the act of additional study between the two test. Second, we, not surprisingly, found a corresponding increase in inability ascriptions as a consequence of increased effort expenditure. Third, lowered expectancies of eventual success result from this second failure. This indication of increasing helplessness, which parallels the increasing evidence of low ability as a major determinant of failure, points to the role of repeated

failure in spite of continued effort in creating student demoralization and eventual performance decrements. And, finally, consider degree of shame. The data provide little evidence to support our prediction that shame would increase as failures accumulate. The reasons for insignificant shame increments are not immediately clear. One possibility concerns the gains in second test performance enjoyed by these students ($\underline{d}_H$ = 1.88; $\underline{d}_L$ + 1.73; $\underline{p} < .05$). While such gains were insufficient to promote feelings of success, virtually all individuals did improve in a relative sense, a situation which may have forestalled additional shame evocation. An alternative possibility is that shame level at failure is essentially noncumulative and that initial chagrin is not intensified by further failure, although the causal dynamic underlying shame may be altered, a point to which we now turn.

The results of a second path analysis for shame, this time employing data gathered at second failure, confirm the self-worth dynamics established earlier and reveal an increasingly important role for ability ascriptions in causing shame as failure accumulates. Reference is made to the $\underline{P}$ values in parentheses in Figure 1. As was true in the case of first failure, ascriptions to inability continued to exert a substantial direct influence on shame in second failure ($\underline{P}$ = .364, $\underline{p} < .05$). The difference in magnitude of the two regression slopes, one at first failure and the other at second failure ($\underline{d}$ = .316, $\underline{p} < .05$), indicates that a second failure increased the importance of perceived ability in causing variations in shame. Likewise, the causal impact of effort on ability attributions (Effort⟶ Low Ability) was substantially strengthened as a result of a second failure ($\underline{d}$ = .327, $p < .05$) which in turn had the effect of increasing the importance of ability ascriptions as an indirect mediator of shame (Effort⟶ Low

Ability⟶Shame). At second failure this indirect source accounted for nearly one quarter (23%) of the shame that followed from effort expenditure. The direct contribution of effort expenditure to shame remained substantially unchanges from first to second failure ($\underline{d}$ = -.093, $\underline{p} < .05$). However, this link showed clear signs of playing a less important role in causing shame as failure accumulated. As will be recalled in the case of first failure, effort expenditure accounted for 68% of the explained variance in shame with the impact of effort mediated through ability attributions contributing only negligibly to that figure. In second failure, as the first predictor variable entered, effort now accounts for less than half of the variation in shame (43.5%), $F_{(1,75)} = 12.17$, $\underline{p} < .05$, of which approximately one-fourth is now mediated indirectly through ability ascriptions. The addition of ability accounts for the remaining 56.5% of the total explained variance ($R^2 = .214$), $F(1,75) = 11.51$, $\underline{p} < .05$. The salience of inability attributions in second failure shame stands in sharp contrast to its somewhat subdued role in initial failure.

An additional path analysis was also performed using expectation for success on a third (hypothetical) test as the prediction variable. Success expectancy, after two successive failures, continued to depend overwhelminly on ability inferences which account for 91% of the variation. While amount of study was insufficient evidence from which to infer ability level at first failure, accumulated effort expenditure over two failure now exerts a substantial direct influence on ability ascriptions ($\underline{P} = .33$, $p < .05$). The difference in magnitude of these first and second failure regression slopes, tested by comparing the F and FF groups ($\underline{d} = .374$, $p < .05$), again indicated that a second failure significantly increases the importance of effort expenditure in determining inferences

to low ability. Thus, repeated failure serves to intensify evidence for inability which in turn results in even more depressed expectancies of success, especially among LSC individuals.

Discussion

In summary, successive failures increase the saliency of low ability explanations and, conversely, the improbability of alternative causal interpretations, principally insufficient effort. As a result, not only do self-perceptions of ability suffer, but their role in moderating shame reactions and expectancy is markedly increased. Failure, especially repeated failure, leads to lowered self-estimates of ability which in turn trigger intensified negative affect and lowered success expectancies, factors which themselves are known to make substantial contributions to variations in subsequent achievement performance (Covington & Omelich, 1979a). This cognitive and affective deterioration is accelerated by the increasing unavailability of externalized explanations for failure, a situation that forces students to acknowledge inability. As failures accumulate, effort expenditure becomes a more salient cue for inability at a time when ability ascriptions become a progressively more potent contributor to further distress and hopelessness.

Nonattainment of one's goals despite repeated effort is a form of noncontingent reinforcement, and as such, embraces the phenomenon of learned helplessness which, in a recent review, is described as a state of depression or loss of hope arising from a realization that the individual's responses are ineffectual in obtaining reinforcement (Abramson, Seligman & Teasdale, 1978). These findings give direct, empirical support to recent learned helplessness

formulations in demonstrating that blaming oneself as incompetent intensifies both the affective and cognitive reactions that precipitate performance decrements in failure. Our data also help resolve an apparent contradiction within the learned helplessness paradigm (Abramson & Sackeim, 1977; Blaney, 1977; Rizley, 1978). These investigators wonder how can it be that individuals depair at an event (failure) over which they believe they have no control. We now know that despair follows not so much from unrewarded effort expenditure (noncontingency) as from a realization that nothing the individual can do will work since low ability is perceived as the major cause of failure. Thus one of the keys to personal resiliency in the face of failure is the continuing plausibility of attempts to externalize responsibility. From a self-worth perspective, inaction is assumed to be a motivated behavior: A strategy for avoiding the implication of failure that one lacks ability. Thus we raise the possibility that loss of hope and accompanying distress are the results of a failure of strategies to protect a sense of competency.

In closing we note that the present findings hold interesting, although disquieting, practical implications for instructional design especially regarding the mastery learning paradigm. The negative consequences of repeated failure are particularly devasting for those low self-confident students who entered the achievement setting already doubting their ability to succeed. Ironically enough, their vulnerability is accentuated by the very properties of mastery learning which are known to enhance performance -- repeated test trials and grading against absolute standards (Covington & Omelich, Note 1). Due to the nature of this recursive study-test system it becomes increasingly less plausible to blame failure on insufficient effort

or external factors such as teacher caprice, bad luck or task difficulty, thereby accelerating a failure of defenses. Those students who appear at greatest risk in the present study share much in common with the "New Student" population described by Cross (1972) as failure-prone, ability-doubting adults, for whom she prescribes mastery-learning as the best way to overcome motivational deficiences. While such a proposal merits our attention, our data also provide ample reason for caution.

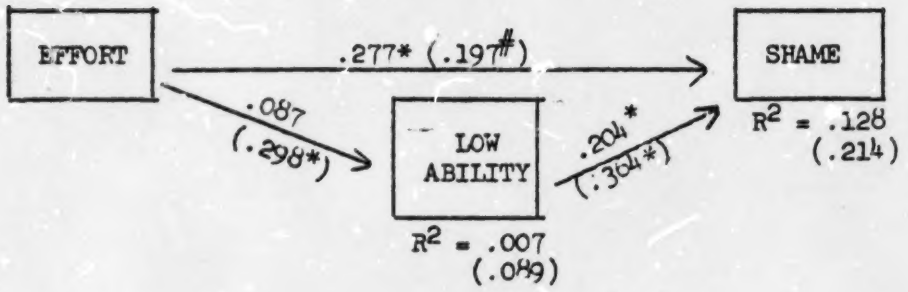
However, in fairness to the behavioral position the benefits of mastery-learning can only be properly assessed with reference to all students, including those who eventually are successful under the system. On the positive side of the ledger, it is clear that a multiple-trial test format permits yet other students to make good their initial failures with all the benefits deriving from success. From our success data we conclude that belated success allows students to share a double dividend: they can appear <u>virtuous</u> by overcoming initial adversity through hard work yet still <u>maintain</u> their self-perceptions of ability. Moreover, our evidence indicates that pride is maximized when individuals achieve up to capacity through hard work. Considering all students in our sample, we note that at the end of a second test, 85% of all two-trial students have reached their grade goals, whereas only 30% of one-trial subjects reached theirs. Correspondingly, the overall level of subjective accomplishment expressed by all two-trial subjects, including low self-concept individuals, is greater than that of one-trial subjects.

Naturally, such an analysis leads us to inquire about what can be done to minimize the negative impact of repeated disappointment, especially among LSC

students. Unfortunately, effective intervention is no simple task. The recalcitrance of this problem is illustrated by the deceptively attractive strategy of lowering grading standards. While poorer students are more likely to achieve their aspired grade when standards are lowered, we can expect a corresponding drop in the achievement level of students in general, since performance level is a function of the standards required. Moreover, for those fewer individuals who still fail to achieve under even reduced standards, the implications of failure are more devastating than for the many more students who fail to meet the higher standards. Maintenance of high standards is especially critical in the mastery-learning paradign where typically a disproportionate number of high grades are attained due to retesting procedures. The reward value of successes achieved through high effort is likely to be cheapened, despite their greater frequency, if they are perceived as having occurred because lowered standards prevailed.

Figure 1

Path Diagram of Effects of Effort Expenditure and Low Ability Ascriptions on Shame following Failure[a]



[a] Path coefficients for second failure shown in parentheses

* $p < .05$

# $p < .10$

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Table 2

Incremental F-Tests: Effects of Effort Expenditure and Ability Ascriptions on Shame in Failure

Antecedent Variables	One Failure				Two Failures			
	R^2	Increment to R^2	F	Percent of R^2	R^2	Increment to R^2	F	Percent of R^2
Effort Expenditure	.087	----	18.01*	67.7	.093	----	12.17*	43.5
Low Ability Attribution	.128	.041	8.56*	32.3	.214	.121	11.51*	56.5

*$p < .05$

Table 1

Posttest Reactions to One-test and Two-test Failures

Among High and Low Self-concept Groups

Dependent Variable		Failure Group: One Test (F) HSC	One Test (F) LSC	Two Tests (FF) First Failure HSC	Two Tests (FF) First Failure LSC	Two Tests (FF) Second Failure HSC	Two Tests (FF) Second Failure LSC
1. Performance	M	13.36	11.92	13.08	11.36	14.96	13.09
	SD	2.38	2.68	1.98	3.11	4.59	2.61
2. Shame	M	3.79	3.92	2.79	3.91	3.17	3.95
	SD	2.03	1.92	1.74	1.93	2.14	2.11
3. Expectancy	M	5.85	5.74	5.75	5.27	4.91	4.84
	SD	1.43	1.47	1.15	1.29	1.73	1.56
Attributions:							
4. Low Effort	M	2.96	3.49	4.54	3.88	3.42	3.18
	SD	1.75	1.85	2.15	1.92	1.89	1.90
5. Low Ability	M	2.21	2.66	1.46	2.73	2.38	3.66
	SD	1.60	1.49	.60	1.71	1.41	1.85
6. Task Difficulty	M	4.64	4.71	4.63	4.20	4.58	4.05
	SD	1.59	1.46	1.24	1.71	1.67	1.79
7. Bad Luck	M	4.46	4.42	4.00	4.23	3.75	3.98
	SD	1.62	1.60	1.89	1.69	1.92	1.67
8. Effort Expended (Pretest Estimate)	M	5.07	4.66	4.29	4.60	5.33	5.26
	SD	1.05	1.28	1.65	1.52	1.31	1.35

Note: HSC = high self-concept (n_F = 28; n_{FF} = 24); LSC = low self-concept (n_F = 77; n_{FF} = 56).

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